

A NEW SPECIES OF APLYSIA ON THE SOUTHERN CALIFORNIA COAST

LINDSAY R. WINKLER

University of Southern California*

During investigations of marine invertebrates for laboratory observation, the here described species was collected and two individuals were maintained in an aquarium for approximately a month. During this period notes were made on its habits and embryological material for further study was obtained. It was noted that this was a species which has apparently escaped description despite over a hundred years of collecting in this area.

The name *Aplysia vaccaria* (the cow-like aplysia) is given to perpetuate the common name that arose spontaneously in the laboratory due to their cow-like grazing on *Egregia*, their principal food while in shallow water.

Aplysia vaccaria n. sp.

This is a large, stout, firm bodied aplysid, apparently from deep water off San Pedro and Palos Verdes, which spawns under rocks in shallow water during the month of February and early



PLATE 2

Aplysia vaccaria in a characteristic browsing position. The scale indicates 6 cm.

*Allan Hancock Foundation contribution number 152.

March. The entire animal is a deep purplish black with fine grey to white maculations, most conspicuous and numerous around the posterior margin of the foot, though still present on the sides, head and parapodia (Plate 2). The sole of the foot is a deep blue-black. The skin is smooth and the body is firmly muscular as compared with *A. californica* (Cooper). The broad, folded, solid black tentacles are a conspicuous part of the head. The rhinophores are placed about 4 cm. caudad and are 2 cm. high on the living animal. The parapodial lobes are separated by 6 cm. in front, are united behind, forming a wall about 5 cm. high around

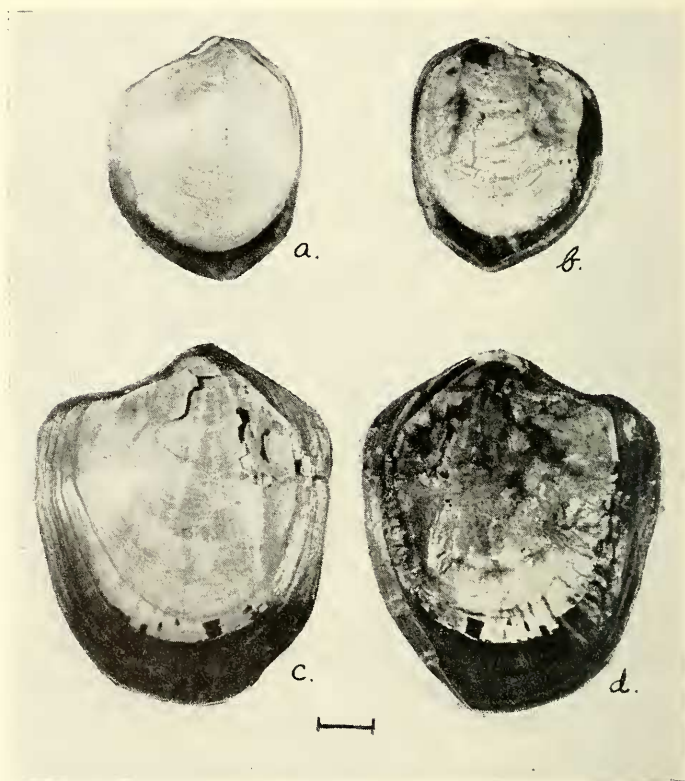


PLATE 3

The shells of two paratypes, illustrating shell variation. The larger illustrated in c and d were taken from an animal of the same size as the holotype. a and c show the outer surface of the shells, b and d the internal. The scale indicates 1 cm.

a horseshoe-shaped area containing the shell, mantle, and gills. The parapodial wall is united behind the siphon, 12 cm. caudad from the point of origin, at which point it is 5 cm. high. The mantle covers the shell completely except for an area about 1 cm. in diameter at its dorsal center. The mantle is recessed at the right posterior margin where it possesses an up-turned extension, the lateral margins of which curl posteriorly to form a tubular, crested excurrent siphon 1.6 cm. in diameter and normally protruding 1-1.5 cm. above the body surface.

The shell is large, concave and elongantly shield-shaped, with an extended apex (Plate 3). It possesses only a very slight, broad depression, the subapical sinus which borders the anterior margin of the siphon. The shell is chitinous with a calcerous area, generally thin, but thickened (0.2 mm.) and brittle from the point of greatest concavity to the apex. This calcified area on the shell measuring 6x7x2.5 cm., extends to about 0.5-1.5 cm. from the margin on all except the apical end. Extending from the apex are two dorsal, slightly elevated ridges radiating over the surface of the calcerous area of the shell. On either side of the right margin of the calcerous area the chitinous material is considerably thickened.

The holotype is deposited at the Allan Hancock Foundation, University of Southern California, No. 983, and measured: length, 25.5 cm.; foot width, 10 cm.; body width in the abdominal region, 13.5 cm.; height 11 cm. All these measurements were made while the living animal was in one position in the aquarium.

The type locality is Point Fermin, San Pedro, Los Angeles county, California.

The species most closely resembling *A. vaccaria* is *A. cedro-sensis* Bartsch, which was described from alcoholic specimens taken on the west coast of central Baja, California. The color pattern bears no resemblance to the present form, being irregularly mottled with grey and black patches. The mantle as viewed in the photographs appears much shorter, especially in the posterior area. The shell of *A. vaccaria* has a shallower sinus, a sharper apex and ridges fanning out from the apex, which appears not to be the case in the other form, neither being mentioned nor appearing in the photographs. It will be noted from Fig. 2, however, that there is some variation in the shells from different individuals of the present species.

Further study on the anatomy, embryology and development of this species and other aplysids of the Eastern Pacific is now in progress.